

REMARKS

Claims 1-6 and 8-12 are pending in the application. Claims 1 and 10 have been amended to indicate that the polyurethane has a softening point of from 10°C to 80°C. Support for the amendment can be found at page 9, lines 18-23 of the specification.

I. Rejections under 35 U.S.C. §103(a)

A. Rejections over Emmons et al.

Claims 1-6 and 8-12 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Pat. No. 4,079,028 to Emmons et al. (hereinafter "Emmons"). The Examiner maintains the rejection, indicating that the "smaller amount of picking and choosing in the prior art is deemed by the examiner to lead to the choice of the instantly claimed reactant combinations." The Examiner further notes that the motivation to combine reactants taught by a single reference to be useful together and selected from a small pool is deemed to render the claims obvious over Emmons.

The present invention is directed to a water-soluble or water-dispersible polyurethane that includes the reaction product of at least one polyether polyol at least one urethane group-containing polyether polyol, at least one C₆-C₂₂ monoalcohol, at least one (cyclo)aliphatic and/or aromatic diisocyanate, optionally at least one C₄-C₁₈ monoisocyanate, and optionally at least one polyisocyanate having an average functionality of > 2. The polyether polyol has an average functionality of ≥ 3. The urethane group-containing polyether polyol has an average functionality of ≥ 4. The starting NCO/OH equivalent ratio is between 0.5:1 to 1.2:1. The polyurethane has a softening point of from 10°C to 80°C.

Emmons discloses latex and other aqueous systems thickened by incorporation of a low molecular weight polyurethane characterized by at least three hydrophobic groups interconnected by hydrophilic polyether groups. The thickeners are prepared at 60°C in a solvent (toluene). At the end of the reaction, the product is isolated by evaporation.

In the present invention, the synthesis of the thickener is conducted at about 120°C without using a solvent. As such, the resulting product in the present invention is different in regard to molecular weight and molecular structure, as evidenced by the softening point of the polyurethane. Emmons is silent regarding any such properties.

As Emmons does not disclose or in any way suggest the synthetic approach in the present invention and the resulting physical properties of the polyurethane as evidenced by the softening point of the polyurethane in the amended claims, the present claims are not obvious over Emmons and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

B. Rejections over Martz et al.

Claims 1-6 and 8-12 stand rejected under 35 U.S.C. §103(a) as being obvious over WO 96/30425 in the name of Martz et al. (hereinafter "Martz"). As in the previous section, the Examiner asserts that the small amount of picking and choosing leads to the claimed choices of reactants, rendering the claims obvious.

Martz discloses an aqueous two-component polyisocyanate coating composition based on an isocyanate-free emulsifier. The emulsifier includes the reaction product of an isocyanate and a compound selected from hydroxy functional polyalkyl ethers and amine compounds.

Martz is directed to an emulsifier, not a thickening agent. So one skilled in the art would not look to emulsifiers as the examiner has done to learn how to make thickening agents. Therefore, as Martz is directed to non-analogous art, the claims are not obvious over Martz.

Further, Martz does not disclose the physical properties of the present polyurethane, specifically the softening point as recited in the amended claims. Martz does not provide any guidance as to the desirability of such a property in a thickening agent. Therefore, Martz could not provide any motivation to derive the claimed polyurethane.

For all of the reasons stated above, the claims are not obvious over Martz and the rejection under 35 U.S.C. § 103(a) should be withdrawn.

II. Rejections under judicially created doctrine of obviousness-type double patenting

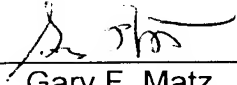
Claims 1-12 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting over Claims 1-16 of copending application SN 10/091,960 and Claims 1-12 of copending application SN 10/092,077.

Applicants request the Examiner hold this rejection in abeyance until such time as Claims 1-16 of copending application SN 10/091,960 and Claims 1-12 of copending application SN 10/092,077 are issued in a patent or the present claims are allowed.

CONCLUSION

Applicants submit that the instant application is in condition for allowance. Accordingly, reconsideration and a Notice of Allowance are respectfully requested for Claims 1-12. If the Examiner is of the opinion that the instant application is in condition for other than allowance, he is requested to contact the Applicants' agent at the telephone number given below so that additional changes to the claims may be discussed.

Respectfully submitted,

By 

Gary F. Matz
Agent for Applicants
Reg. No. 46,179

Bayer Polymers LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3897
FACSIMILE PHONE NUMBER:
(412) 777-3902
lo/MATZ/gfm048